

PATENT

Atty Docket No.: 10006299-1
App. Scr. No.: 09/854,580

IN THE CLAIMS:

Please find a listing of the claims below. The statuses of the claims are shown in parentheses.

1. (Currently amended) An image enhancement method using face detection algorithms, comprising:
 - automatically detecting human faces in an image using face detection algorithms;
 - automatically locating the human faces in the image;
 - ~~automatically locating eyes in the human faces;~~ automatically measuring at least one of lightness levels, contrast levels, and color levels of the human faces; and
 - automatically enhancing an appearance of the image based on the measured at least one of the lightness levels, contrast levels, and color levels of the human faces in the image by changing at least one of the lightness levels, contrast levels, and color levels of the image, ~~wherein the step of automatically enhancing comprises automatically determining if there exists a red-eye artifact.~~
2. (Original) The method of claim 1, wherein the enhancing step includes automatically enhancing lightness levels of the human faces.
3. (Original) The method of claim 1, wherein the enhancing step includes automatically enhancing contrast levels of the human faces.
4. (Original) The method of claim 1, wherein the enhancing step includes automatically enhancing color levels of the human faces.

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5. (Canceled).

6. (Currently amended) The method of claim ~~[[1]]~~27, wherein the enhancing step comprises:

reducing or removing the red eye artifact from the human faces.

7. (Original) The method of claim 1, wherein the enhancing step includes using a mapping technique to produce the image with target levels for a mean value or a variation value.

8. (Currently amended) An apparatus for enhancing an image using face detection algorithms, comprising:

a module for automatically detecting human faces in an image using face detection algorithms;

a module for automatically locating the human faces in the image;

~~a module for automatically locating eyes in the human faces;~~ a module for measuring at least one of lightness levels, contrast levels, and color levels of the human faces; and

a module for automatically enhancing an appearance of the image based on the measured at least one of the lightness levels, contrast levels, and color levels of the human faces in the image by changing at least one of the lightness levels, contrast levels, and color levels of the image, wherein the module for automatically enhancing comprises a module for automatically determining if there exists a red-eye artifact.

9. (Original) The apparatus of claim 8, wherein the image is a digital image.

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10. (Original) The apparatus of claim 8, wherein the module for enhancing the appearances of the image includes a module for automatically enhancing lightness levels of the human faces.

11. (Original) The apparatus of claim 8, wherein the module for enhancing the appearances of the image includes a module for automatically enhancing contrast levels of the human faces.

12. (Original) The apparatus of claim 8, wherein the module for enhancing the appearances of the image includes a module for automatically enhancing color levels of the human faces.

13. (Canceled).

14. (Currently amended) The apparatus of claim ~~[[8]]~~28, wherein the module for enhancing the appearances of the image comprises:

a module for reducing or removing the red eye artifact from the human faces.

15. (Currently amended) A computer readable medium comprising instructions for image enhancement using face detection, the instructions comprising:

automatically detecting human faces in an image using face detection algorithms;

automatically locating the human faces in the image;

automatically locating eyes in the human faces; automatically measuring at least one of lightness levels, contrast levels, and color levels of the human faces; and

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automatically enhancing an appearance of the image based on the measured at least one of the lightness levels, contrast levels, and color levels of the human faces in the image by changing at least one of the lightness levels, contrast levels, and color levels of the image; wherein the step of automatically enhancing comprises automatically determining if there exists a red-eye artifact.

16. (Original) The computer readable medium of claim 15, wherein the instructions for enhancing the appearance of the image include automatically enhancing lightness levels of the human faces.

17. (Original) The computer readable medium of claim 15, wherein the instructions for enhancing the appearance of the image include automatically enhancing contrast levels of the human faces.

18. (Original) The computer readable medium of claim 15, wherein the instructions for enhancing the appearance of the image includes automatically enhancing color levels of the human faces.

19. (Canceled).

20. (Currently amended) The computer readable medium of claim ~~[[15]]~~29, wherein the instructions for enhancing the appearance of the image comprises:
reducing or removing the red eye artifact of the human faces.

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21. (Currently amended) A system for enhancing an image using face detection algorithms, said system comprising:

means for automatically detecting human faces in an image using face detection algorithms;

means for automatically locating the human faces in the image;

~~means for automatically locating eyes in the human faces;~~ means for measuring at least one of lightness levels, contrast levels, and color levels of the human faces; and

means for automatically enhancing an appearance of the image based on the measured at least one of lightness levels, contrast levels, and color levels of the human faces in the image by changing at least one of the lightness levels, contrast levels, and color levels of the image, wherein the step of automatically enhancing comprises automatically determining if there exists a red-eye artifact.

Claims 22-24. (Canceled).

25. (Currently amended) The system of claim 21, wherein the means for enhancing includes means for automatically locating eyes in the human faces and means for reducing or removing the red eye artifact from the human faces.

26. (Previously presented) The system of claim 21, wherein the means for enhancing includes means for using a mapping technique to produce the image with target levels for a mean value or a variation value.

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27. (New) The method of claim 1, wherein the locating step includes automatically locating eyes in the human faces.

28. (New) The apparatus of claim 8, wherein the module for locating the human faces includes a module for automatically locating eyes in the human faces.

29. (New) The computer readable medium of claim 15, wherein the instructions for locating the human faces include automatically locating eyes in the human faces.